

What is claimed:

1 1. A method of improving security processing in a computing network, comprising steps of:  
2 providing security processing in an operating system kernel;  
3 providing an application program which makes use of the operating system kernel during  
4 execution;  
5 executing the application program; and  
6 selectably securing at least one communication of the executing application program using  
7 the provided security processing in the operating system kernel.

1 2. The method according to Claim 1, further comprising the step of:  
2 configuring one or more ports used by the provided application program such that  
3 communications using the configured ports are to be secured; and  
4 wherein the selectably securing step then secures all communications using the configured  
5 ports.

1 3. The method according to Claim 2, wherein the provided application program does not  
2 include code for security processing.

1 4. The method according to Claim 2, wherein the configuring step further comprises  
2 specifying information to be used by the selectably securing step.

1 5. The method according to Claim 4, wherein the specified information comprises one or

2 more of: authentication information; cipher suites options; and security key input information.

1 6. The method according to Claim 2, wherein the configuring step comprises one or more of:  
2 providing port definition statements; setting environment variables; and using job control  
3 language.

1 7. The method according to Claim 1, further comprising the step of providing, in the secure  
2 processing, support for one or more security directives.

1 8. The method according to Claim 7, further comprising the step of invoking, during  
2 execution of the provided application program, one or more of the provided security directives.

1 9. The method according to Claim 7, wherein the provided security directives comprise one  
2 or more of: access capability for a client certificate; access capability for a client identifier; a  
3 request to start operation of the selectably securing step; and a request to stop operation of the  
4 selectably securing step.

1 10. The method according to Claim 8, wherein the provided security directives include an  
2 access capability for a client certificate, and wherein the invoking step invokes the access  
3 capability, and further comprising the step of returning the client certification from the provided  
4 security processing to the executing application program in response to the invocation.

1 11. The method according to Claim 8, wherein the provided security directives include an  
2 access capability for a client identification, and wherein the invoking step invokes the access  
3 capability, and further comprising the step of returning the client identification from the provided  
4 security processing to the executing application program in response to the invocation.

1 12. The method according to Claim 1, further comprising the steps of:  
2 providing, in the secure processing, support for a security directive that requests the  
3 selectably securing step to begin operating; and  
4 invoking the security directive; and  
5 wherein the selectably securing step then secures all communications of the executing  
6 application program.

1 13. The method according to Claim 1, further comprising the steps of:  
2 providing, in the secure processing, support for a security directive that requests the  
3 selectably securing step to stop operating; and  
4 invoking the security directive; and  
5 wherein the selectably securing step then stops securing communications of the executing  
6 application program.

1 14. The method according to Claim 12, wherein the security directive specifies information to  
2 be used by the selectably securing step.

1 15. The method according to Claim 14, wherein the specified information comprises one or  
2 more of: authentication information; cipher suites options; and security key input information.

1 16. The method according to Claim 12, wherein a decision to invoke the security directive is  
2 made by the executing application program.

1 17. The method according to Claim 12, wherein a decision to invoke the security directive is  
2 made by carrying out, by the executing application program, a security negotiation protocol.

1 18. The method according to Claim 1, wherein the provided application program includes calls  
2 that invoke security processing, and further comprising steps of:  
3 intercepting, in the provided security processing, the calls; and  
4 executing, responsive to the interception, corresponding security functions.

1 19. The method according to Claim 1, wherein the provided application program includes calls  
2 that invoke security processing, and further comprising step of interpreting, in the provided  
3 security processing, the calls as being non-operative.

1 20. The method according to Claim 18, wherein the provided application program may be  
2 executed on a system which does not include the provided security processing in the operating  
3 system kernel, in which case the calls operate to perform security processing instead of the  
4 selectably securing step.

1 21. The method according to Claim 1, wherein the provided security processing operates in a  
2 Transmission Control Protocol layer of the operating system kernel.

1 22. The method according to Claim 1, wherein the provided security processing implements  
2 Secure Sockets Layer.

1 23. The method according to Claim 1, wherein the provided security processing implements  
2 Transaction Layer Security.

1 24. A system for improving security processing in a computing network, comprising:  
2 means for performing security processing in an operating system kernel;  
3 means for executing an application program which makes use of the operating system  
4 kernel during execution; and  
5 means for selectably securing at least one communication of the executing application  
6 program using the means for performing security processing, in a manner which is transparent to  
7 the executing application program.

1 25. A system for improving security processing in a computing network, comprising:  
2 means for performing security processing in an operating system kernel;  
3 means for executing an application program which makes use of the operating system  
4 kernel during execution; and

means for selectably securing at least one communication of the executing application  
program using the security processing performed in the operating system kernel.

26. A computer program product for improving security processing in a computing network,  
the computer program product embodied on one or more computer-readable media and  
comprising:

computer-readable program code means for performing security processing in an  
operating system kernel;

computer-readable program code means for executing an application program which  
makes use of the operating system kernel during execution; and

computer-readable program code means for selectably securing at least one  
communication of the executing application program using the security processing performed in  
the operating system kernel.